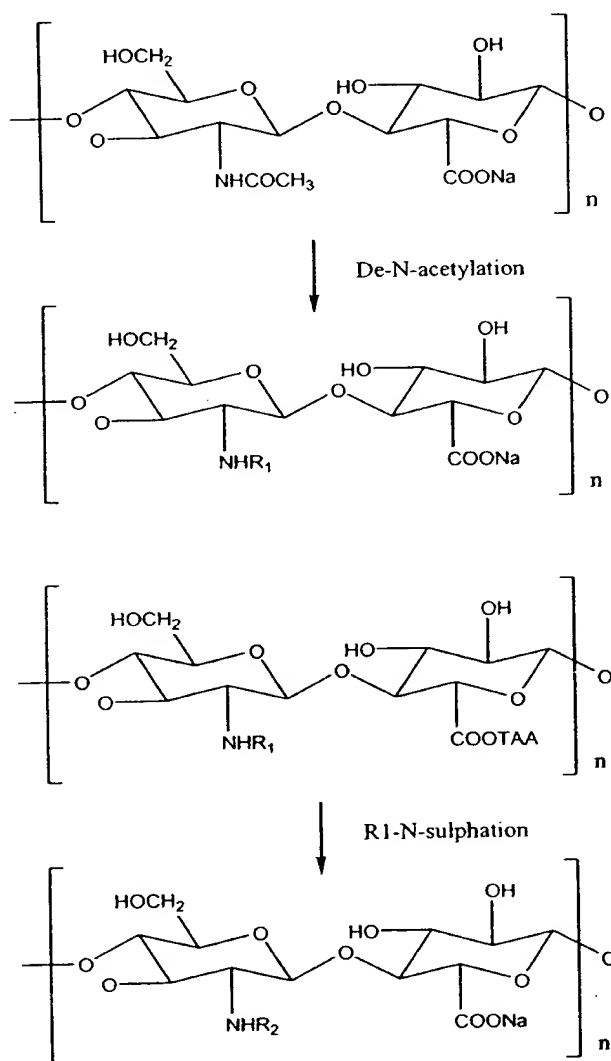


both types being disclosed in U.S. Patent No. 6,051,701, which is incorporated herewith by reference;

B<sub>1</sub>) N-sulphated hyaluronic acids, and

B<sub>2</sub>) N-sulphated hyaluronic acid derivatives,

both types being obtainable by means of a controlled sulphation reaction on the amino group of glucosamine of hyaluronic acid, previously deacetylated according to the procedure described by P. Shaklee (1984) Biochem. J., 217, 187-197. The reaction proceeds as illustrated below:



n: from 12 to 12,500

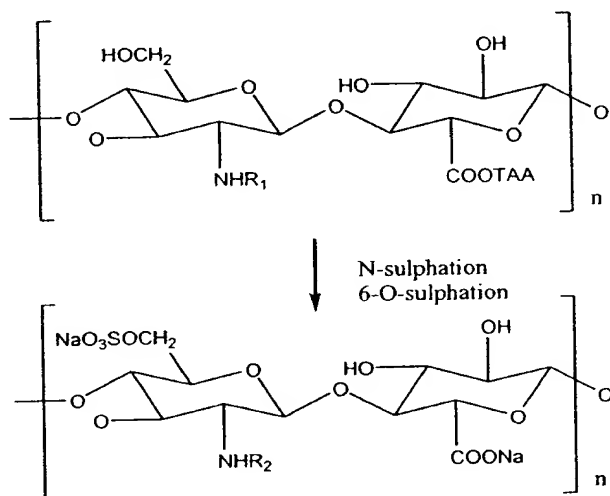
$R_1 = H, COCH_3$

TAA = tetra-alkylammonium

$R_2 = SO_3, COCH_3$

Diagram 1

b) and c) mean the products of the chemical reaction illustrated in Diagram 1, wherein, besides the amino group of glucosamine, the primary hydroxy function of the same residue is also totally or partially involved in the sulphation reaction, as illustrated below:



n: from 12 to 12,500

$R_1 = H, COCH_3$

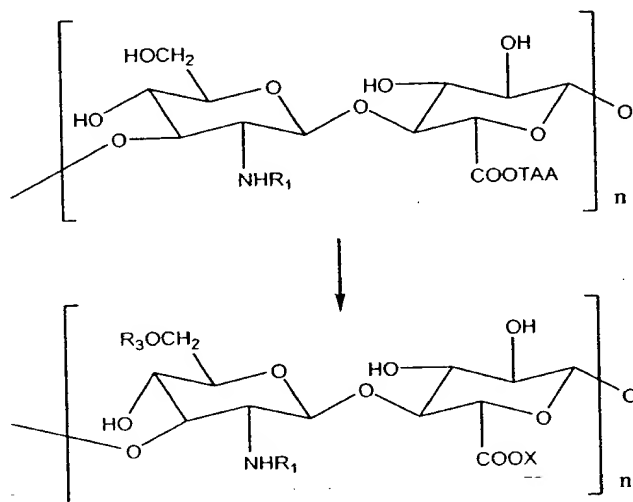
TAA = tetra-alkylammonium

$R_2 = SO_3, COCH_3$

Diagram 2

The derivatives generated according to diagrams 1 and 2 can be used as intermediate reactants in the preparation of compounds, according to the procedure described in U.S. 4,851,521, wherein the carboxy function of the glucuronic residue of hyaluronic acid, partially 2-N-sulphated or partially 2-N-sulphated and

partially or totally 6-O-sulphated, is partially or completely reacted with alcohols of the aliphatic, aromatic, arylaliphatic, cycloaliphatic, heterocyclic series, producing the respective partial or total esters:



n: from 12 to 12,500

$R_1 = H, COCH_3$

TAA = tetra-alkylammonium

$R_2 = SO_3, COCH_3$

$R_3 = SO_3, H$

X = alcoholic residue, Sodium

Diagram 3

Moreover it is possible to use the synthetic derivatives according to diagrams 1 and 2 as intermediates in the preparation of crosslinked compounds, according to the procedures described in U.S. 5,676,964 and U.S. 4,957,744 respectively, wherein a part or all of the carboxy groups belonging to the D-glucosamine residue are reacted: i) using condensing agents with the alcoholic functions of the same polysaccharide chain or other chains, generating inner (or lactone) esters and intermolecular